



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,411	05/04/2001	Daniel R. Jeske	Jeske 6-11/2925-0555P	7710

7590 09/14/2005  
Harnes, Dickey & Pierce, P.L.C.  
P.O. Box 8910  
Reston, VA 20195

EXAMINER

PERILLA, JASON M

ART UNIT PAPER NUMBER

2638

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/848,411

Applicant(s)

JESKE ET AL.

Examiner

Jason M. Perilla

Art Unit

2638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 August 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 and 20-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 15-17 is/are allowed.
- 6) ☒ Claim(s) 1-3, 9, 12-14 and 18 is/are rejected.
- 7) ☒ Claim(s) 4-8, 10, 11 and 20-24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-18, and 20-24 are pending in the instant application.

#### ***Specification***

2. On page 5, line 22 of the specification should be amended to include the concurrently filed application number.

#### ***Claim Objections***

3. Claims 2-10 are objected to because of the following informalities:

Regarding claim 2, the claim is objected to because one is unable to determine if the "at least two sample variance estimates" are two separate variance estimates or one sample variance estimate based on at least two samples.

Regarding claim 8, in line 2, "the number of samples" should be replaced by --a number of samples--.

Appropriate correction is required.

#### ***Response to Amendment***

4. In view of the amendment filed August 29, 2005, the prior art rejection of claim 18 as being anticipated by Buehrer et al (US 6614857) set forth in the final office action dated July 15, 2005 has been withdrawn.

The finality of the rejection of the last Office action is withdrawn because a new ground for rejection is set forth below.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 9 and 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 9, the specification does not enable one skilled in the art to translate the scaled SINR estimate by adding the number of the plurality of samples alone. That is, the mere function of adding the plurality of samples is not enabled by the specification to be a complete step in the method of translating the SINR. The specification provides that the translating is, at least, *based* upon the plurality of samples, but does not provide that adding the samples alone would cause the translating step to be complete.

Regarding claim 12, the claim is rejected for the same reasons as applied to claim 9 above.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-3, 13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Dapper et al (US 5809065 – hereafter “Dapper”)

Regarding claim 1, Dapper discloses according to figure 2 a method of estimating a signal-to-interference+noise ratio (SINR), comprising: generating an initial SINR estimate (38) based on a mean (36) of a plurality of samples (34; col. 2, lines 52-55 and 58-60) and a sample variance estimate (30) of the plurality of samples (28; col. 2, lines 47-49); scaling the initial SINR estimate (40) by applying it to a threshold; and translating (42) the scaled SINR estimate by applying it to a translating switch. As broadly as claimed, the scaling is considered to be a comparison with a threshold and the translating is the conversion by a switch.

Regarding claim 2, Dapper discloses the limitations of claim 1 as applied above. Further, Dapper discloses that the generating step generates the initial SINR estimate based on at least two sample variance estimates or that the sample variance estimate is based on at least two samples (col. 2, lines 43-50).

Regarding claim 3, Dapper discloses the limitations of claim 2 as applied above. Further, Dapper discloses that the generating step generates a smoothed or averaged sampled variance estimate (fig. 2, ref. 28) based on the at least two sample variance estimates, and generates the initial SINR estimate (38) based on the smoothed sample variance estimate.

Regarding claim 13, Dapper discloses the limitations of claim 1 as applied above. Further, Dapper discloses, as broadly as claimed, that the plurality of samples (fig. 2, refs. 18 and 22) are pilot symbol samples or samples used to determine the signal to noise ratio.

Regarding claim 14, Dapper discloses the limitations of claim 1 as applied above. Further, Dapper discloses that the plurality of samples (fig. 2, refs. 18 and 22) are data symbol samples (col. 2, lines 35 and 42-44).

9. Claim 18 is rejected under 35 U.S.C. 102(e) as being anticipated by Buehrer et al (US 6614857; hereafter "Buehrer" – previously cited).

Regarding claim 18, Buehrer discloses a method of estimating a signal-to-interference+noise ratio (SINR), comprising: generating a first SINR or SNR estimate ( $\gamma_p$ ) based on received pilot symbol samples (col. 4, lines 54-56); generating a second SINR estimate ( $\gamma_s$ ) based on received data symbol samples (col. 4, lines 54-56); and combining the first and second SINR estimates to produce a composite SINR estimate (col. 4, line 50; equation 7). The generation of the SNR of the pilot signal and the SNR of the data signal is certain because the values are known by the method of Buehrer, and, as broadly as claimed, the combining result ( $\delta$ ) is disclosed in equation 7 as the

Art Unit: 2638

division of the pilot SNR by the sum of the pilot SNR and the data SNR. Further, Buehrer discloses that the combining includes weighting, by a variable  $T_p$ , the first SINR estimate (col. 4, eq. 8) and weighting, by a variable  $T_s$ , the second SINR estimate (col. 4, eq. 9). According to Buehrer, the ratio of the pilot filter bandwidth (col. 5, line 15) is utilized to "weight" each of the pilot SINR ( $\gamma_p$ ; col. 4, eq. 8) and the data SINR ( $\gamma_s$ ; col. 4, eq. 9) before they are combined (col. 4, eq. 7).

### ***Allowable Subject Matter***

10. Claims 15-17 are indicated to contain allowable subject matter in view of the prior art of record.

11. Claims 4-8, 10, 11, and 20-24 are objected to as being dependent upon a rejected base claim, but would be allowable in view of the prior art of record if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

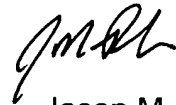
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Perilla whose telephone number is (571) 272-3055. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone

Art Unit: 2638

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jason M. Perilla  
September 8, 2005

jmp



CHIEH M. FAN  
PRIMARY EXAMINER